

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An apparatus to selectively remove a conductive layer from a substrate, the apparatus comprising:

a potentiostat having a counter electrode terminal to couple to a counter electrode, a reference electrode terminal to couple to a reference electrode, and a working electrode terminal to couple to a portion of ~~the~~ a conductive layer consisting of nickel of a substrate to be selectively removed from the substrate by an independent clip, the substrate having sub-micron interconnect features;

a tank to store an electrolyte solution; and

a silver/silver chloride reference electrode coupled to the potentiostat,

wherein the potentiostat is set to maintain a potential difference between a substrate and the silver/silver chloride reference electrode at a fixed value -0.4 to +0.2 volts, and

wherein during selective removal of the a conductive layer of nickel on a substrate, the a counter electrode, the reference electrode, and a working electrodes electrode are immersed into the electrolyte solution and a potential difference between the substrate and the reference electrode is maintained at a fixed value and the selective removal of the conductive layer is ended when a second current value between the substrate and the counter electrode is substantially lower than a first current value.

2. (Original) The apparatus of claim 1, wherein the apparatus is configured to vary a current between the substrate and the counter electrode to maintain the potential difference between the substrate and the reference electrode at a fixed value.

3. (Original) The apparatus of claim 1, wherein the conductive layer of the substrate is etched on a conductive barrier layer surface of the substrate.

4. (Original) The apparatus of claim 1, wherein the conductive layer includes nickel.

5. (Original) The apparatus of claim 1, wherein the sub-micron interconnect features include a noble metal.

6. (Original) The apparatus of claim 1, wherein the noble metal includes copper.
7. (Original) The apparatus of claim 1, wherein the barrier layer includes titanium nitride.